Bruhath Bengaluru Mahanagara Palike

# QUALITY ASSURANCE/QUALITY CONTROL REPORT

Office of the Chief Engineer (Quality Assurance/Control) Annexure-05,
BBMP Head Office, Hudson circle Bengalore-001,
Ph.no:08022975541, E-mail ID:qualitycontrol.bbmp@gmail.com

# QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

| | | |
|---|---|---|
| | | SE/QA/PR/169/2022-23, DATE: 31/05/2023 |
| **Name of Work** | : | Package. 04 (Consists of 3 works)<br>Estimated cost 900.00 Lakhs |
| **Job Code** | : | 009-23-000002 |
| **Bill No.** | : | **1st &Final, Rs.8,71,50,159.00 (including GST)** |
| **Name of Agency** | : | Sri. Chidananda Murthy R. |
| **Type of Test Performed** | : | Rebound Hammer test as per IS13311-(2)-1992, &Bitumen Content and Gradation test as per Table 500.10& Table 500.17 MORTH V Revision. |
| **Materials on which Tests Was Performed** | : | 1. RCC Drain Wall (M20)<br>2. Culvert Slab (M20)<br>3. Precast Cover Slab (M20)<br>4. Bituminous Concrete (Grade II) |
| **Officers present during inspection** | : | 1.Smt. Archana AE – Ward no 09<br>2. Sri. Somshekar AEE- Vidyaranyaoura sub division<br>3.Sri. Kiran.B.. EE-Quality Assurance |
| **Project Management Consultants/Third Party** | : | Transhight Consultants Pvt.Ltd. |
| **Observations** | : | ➢ NDT (Rebound hammer test) and Bitumen Content and Gradation Test was conducted by Project Management Consultants at random locations in presence of AEE (Ward no 09), AEE (Vidyaranyaoura sub division) & along with EE of QA division .<br>➢ The Rebound Hammer Test was conducted randomly on RCC Drain Wall (M20), Culvert slab (M20), Precast cover slab (M20) and also The Bitumen content & Gradation Test were conducted for BC (Grade-II).The readings and results are recorded by the PMC consultants.<br>➢ The readings of Rebound Hammer Test and Bitumen Content & Gradation Test results are tabulated and analysis of test results done by PMC is here by furnished.<br>➢ The location wise test results are reproduced in the tables shown below. |
| **Test Locations** | : | Location 1: Durgapermeshwari Road (at entrance, opp house no #897/1, opp house no #898)<br>Location 2: 6th block BEL layout (opp to park no 4, opp to #138, opp to #135)<br>Location 3: Defence layout (opp to site to #217, opp to site #213, opp to site #207)<br>Location 4: 5th cross NTI Layout (opp to site #283, opp to #84/A, opp to #134)<br>Location 5: 8th main Sai baba temple road (Opp to temple, opp to # 751)<br>Location 6: 8th main road to Narayan school (Opp BWSSB office, Opp to # 37, Opp to # 135 vidmahe enclave)<br>Location 7: Ventketeshware temple Road (opp to temple, Opp road to #871/1, Opp to#898)<br>Location 8: Thindlu Govt Hospital Road (opp to chicken shop, opp road to nagamas house, Opp to # 36)<br>Location 9: Ananda layout (opp to #114, opp to #16, opp to Srivari Building)<br>Location 10: Parvathama Layout (opp to #4, opp to #87, oppo to #14)<br>Location 11: 4th cross Anjaneya temple layout (Krishna street road entrance) |

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Table-01: Bitumen Content and gradation Test in Durgapermeshwari Road at random locations
BC- (GRADE-II)

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 921 | 1005 | 930 |
| 2. final weight of sample after extraction (gms) w2 | 872 | 951 | 880 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 50 | 55 | 51 |
| 7. Bitumen content in % (w6/w1)x100 | 5.42 | 5.47 | 5.48 |
| 8.Average | 5.45 | | |

| SIEVE SIZE mm | Trail 1 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 34.01 | 34.01 | 3.90 | 96.10 | 90-100 |
| 9.5 | 146.50 | 180.50 | 20.70 | 79.30 | 70-88 |
| 4.75 | 183.99 | 364.50 | 41.80 | 58.20 | 53-71 |
| 2.36 | 64.53 | 429.02 | 49.20 | 50.80 | 42-58 |
| 1.18 | 97.66 | 526.69 | 60.40 | 39.60 | 34-48 |
| 0.6 | 48.83 | 575.52 | 66.00 | 34.00 | 26-38 |
| 0.3 | 117.72 | 693.24 | 79.50 | 20.50 | 18-28 |
| 0.15 | 48.83 | 742.07 | 85.10 | 14.90 | 12-20 |
| 0.075 | 68.89 | 810.96 | 93.00 | 7.00 | 4-10 |

| SIEVE SIZE mm | Trail 2 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 52.31 | 52.31 | 5.50 | 94.50 | 90-100 |
| 9.5 | 167.38 | 219.68 | 23.10 | 76.90 | 70-88 |
| 4.75 | 149.31 | 368.99 | 38.80 | 61.20 | 53-71 |
| 2.36 | 108.41 | 477.40 | 50.20 | 49.80 | 42-58 |
| 1.18 | 82.74 | 560.14 | 58.90 | 41.10 | 34-48 |
| 0.6 | 78.93 | 639.07 | 67.20 | 32.80 | 26-38 |
| 0.3 | 109.37 | 748.44 | 78.70 | 21.30 | 18-28 |
| 0.15 | 54.21 | 802.64 | 84.40 | 15.60 | 12-20 |
| 0.075 | 89.39 | 892.04 | 93.80 | 6.20 | 4-10 |

| SIEVE SIZE mm | Trail 3 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 32.56 | 32.56 | 3.70 | 96.30 | 90-100 |
| 9.5 | 159.28 | 191.84 | 21.80 | 78.20 | 70-88 |
| 4.75 | 131.12 | 322.96 | 36.70 | 63.30 | 53-71 |
| 2.36 | 91.52 | 414.48 | 47.10 | 52.90 | 42-58 |
| 1.18 | 91.52 | 506.00 | 57.50 | 42.50 | 34-48 |
| 0.6 | 104.72 | 610.72 | 69.40 | 30.60 | 26-38 |
| 0.3 | 71.28 | 682.00 | 77.50 | 22.50 | 18-28 |
| 0.15 | 72.16 | 754.16 | 85.70 | 14.30 | 12-20 |
| 0.075 | 73.92 | 828.08 | 94.10 | 5.90 | 4-10 |

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ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
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31/5/23
ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Table-02: Bitumen Content and gradation Test in 6th block BEL layout at random locations
BC- (GRADE-II)

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 902 | 977 | 1116 |
| 2. final weight of sample after extraction (gms) w2 | 854 | 924 | 1056 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 49 | 54 | 61 |
| 7. Bitumen content in % (w6/w1)x100 | 5.43 | 5.52 | 5.46 |
| 8.Average | | 5.47 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 53.80 | 53.80 | 6.30 | 93.70 | 90-100 |
| 9.5 | 141.76 | 195.57 | 22.90 | 77.10 | 70-88 |
| 4.75 | 99.06 | 294.63 | 34.50 | 65.50 | 53-71 |
| 2.36 | 156.28 | 450.91 | 52.80 | 47.20 | 42-58 |
| 1.18 | 61.49 | 512.40 | 60.00 | 40.00 | 34-48 |
| 0.6 | 74.30 | 586.70 | 68.70 | 31.30 | 26-38 |
| 0.3 | 46.97 | 633.67 | 74.20 | 25.80 | 18-28 |
| 0.15 | 87.11 | 720.78 | 84.40 | 15.60 | 12-20 |
| 0.075 | 78.57 | 799.34 | 93.60 | 6.40 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 37.88 | 37.88 | 4.10 | 95.90 | 90-100 |
| 9.5 | 154.31 | 192.19 | 20.80 | 79.20 | 70-88 |
| 4.75 | 108.11 | 300.30 | 32.50 | 67.50 | 53-71 |
| 2.36 | 219.91 | 520.21 | 56.30 | 43.70 | 42-58 |
| 1.18 | 8.32 | 528.53 | 57.20 | 42.80 | 34-48 |
| 0.6 | 52.67 | 581.20 | 62.90 | 37.10 | 26-38 |
| 0.3 | 132.13 | 713.33 | 77.20 | 22.80 | 18-28 |
| 0.15 | 62.83 | 776.16 | 84.00 | 16.00 | 12-20 |
| 0.075 | 97.02 | 873.18 | 94.50 | 5.50 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 33.79 | 33.79 | 3.20 | 96.80 | 90-100 |
| 9.5 | 196.42 | 230.21 | 21.80 | 78.20 | 70-88 |
| 4.75 | 151.01 | 381.22 | 36.10 | 63.90 | 53-71 |
| 2.36 | 165.79 | 547.01 | 51.80 | 48.20 | 42-58 |
| 1.18 | 43.30 | 590.30 | 55.90 | 44.10 | 34-48 |
| 0.6 | 147.84 | 738.14 | 69.90 | 30.10 | 26-38 |
| 0.3 | 63.36 | 801.50 | 75.90 | 24.10 | 18-28 |
| 0.15 | 98.21 | 899.71 | 85.20 | 14.80 | 12-20 |
| 0.075 | 91.87 | 991.58 | 93.90 | 6.10 | 4-10 |

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

## Table-03: Bitumen Content and gradation Test in Defence layout at random locations

BC- (GRADE-II)

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 980 | 918 | 1024 |
| 2. final weight of sample after extraction (gms) w2 | 928 | 869 | 968 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 53 | 50 | 57 |
| 7. Bitumen content in % (w6/w1)x100 | 5.4 | 5.44 | 5.56 |
| 8.Average | | 5.46 | |

| SIEVE SIZE mm | Trail 1 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 38.05 | 38.05 | 4.10 | 95.90 | 90-100 |
| 9.5 | 154.98 | 193.02 | 20.80 | 79.20 | 70-88 |
| 4.75 | 108.58 | 301.60 | 32.50 | 67.50 | 53-71 |
| 2.36 | 220.86 | 522.46 | 56.30 | 43.70 | 42-58 |
| 1.18 | 8.35 | 530.82 | 57.20 | 42.80 | 34-48 |
| 0.6 | 52.90 | 583.71 | 62.90 | 37.10 | 26-38 |
| 0.3 | 132.70 | 716.42 | 77.20 | 22.80 | 18-28 |
| 0.15 | 63.10 | 779.52 | 84.00 | 16.00 | 12-20 |
| 0.075 | 97.44 | 876.96 | 94.50 | 5.50 | 4-10 |

| SIEVE SIZE mm | Trail 2 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 44.32 | 44.32 | 5.10 | 94.90 | 90-100 |
| 9.5 | 154.68 | 199.00 | 22.90 | 77.10 | 70-88 |
| 4.75 | 115.58 | 314.58 | 36.20 | 63.80 | 53-71 |
| 2.36 | 161.63 | 476.21 | 54.80 | 45.20 | 42-58 |
| 1.18 | 49.53 | 525.75 | 60.50 | 39.50 | 34-48 |
| 0.6 | 55.53 | 581.27 | 66.89 | 33.11 | 26-38 |
| 0.3 | 73.95 | 655.23 | 75.40 | 24.60 | 18-28 |
| 0.15 | 90.38 | 745.60 | 85.80 | 14.20 | 12-20 |
| 0.075 | 67.78 | 813.38 | 93.60 | 6.40 | 4-10 |

| SIEVE SIZE mm | Trail 3 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 33.88 | 33.88 | 3.50 | 96.50 | 90-100 |
| 9.5 | 166.50 | 200.38 | 20.70 | 79.30 | 70-88 |
| 4.75 | 130.68 | 331.06 | 34.20 | 65.80 | 53-71 |
| 2.36 | 170.37 | 501.42 | 51.80 | 48.20 | 42-58 |
| 1.18 | 66.79 | 568.22 | 58.70 | 41.30 | 34-48 |
| 0.6 | 85.18 | 653.40 | 67.50 | 32.50 | 26-38 |
| 0.3 | 99.70 | 753.10 | 77.80 | 22.20 | 18-28 |
| 0.15 | 65.82 | 818.93 | 84.60 | 15.40 | 12-20 |
| 0.075 | 80.34 | 899.27 | 92.90 | 7.10 | 4-10 |

**Table-04: Bitumen Content and gradation Test in 5th cross NTI Layout at random locations**
**BC- (GRADE-II)**

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 987 | 1059 | 932 |
| 2. final weight of sample after extraction (gms) w2 | 934 | 1001 | 882 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 54 | 59 | 51 |
| 7. Bitumen content in % (w6/w1)x100 | 5.47 | 5.57 | 5.47 |
| 8.Average | | 5.50 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 36.43 | 36.43 | 3.90 | 96.10 | 90-100 |
| 9.5 | 127.96 | 164.38 | 17.60 | 82.40 | 70-88 |
| 4.75 | 203.61 | 368.00 | 39.40 | 60.60 | 53-71 |
| 2.36 | 105.54 | 473.54 | 50.70 | 49.30 | 42-58 |
| 1.18 | 100.87 | 574.41 | 61.50 | 38.50 | 34-48 |
| 0.6 | 48.57 | 622.98 | 66.70 | 33.30 | 26-38 |
| 0.3 | 84.99 | 707.97 | 75.80 | 24.20 | 18-28 |
| 0.15 | 73.79 | 781.76 | 83.70 | 16.30 | 12-20 |
| 0.075 | 84.99 | 866.75 | 92.80 | 7.20 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 63.06 | 63.06 | 6.30 | 93.70 | 90-100 |
| 9.5 | 133.13 | 196.20 | 19.60 | 80.40 | 70-88 |
| 4.75 | 172.17 | 368.37 | 36.80 | 63.20 | 53-71 |
| 2.36 | 147.15 | 515.52 | 51.50 | 48.50 | 42-58 |
| 1.18 | 84.08 | 599.60 | 59.90 | 40.10 | 34-48 |
| 0.6 | 73.07 | 672.67 | 67.20 | 32.80 | 26-38 |
| 0.3 | 104.10 | 776.78 | 77.60 | 22.40 | 18-28 |
| 0.15 | 70.07 | 846.85 | 84.60 | 15.40 | 12-20 |
| 0.075 | 85.09 | 931.93 | 93.10 | 6.90 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 41.45 | 41.45 | 4.70 | 95.30 | 90-100 |
| 9.5 | 102.31 | 143.77 | 16.30 | 83.70 | 70-88 |
| 4.75 | 207.27 | 351.04 | 39.80 | 60.20 | 53-71 |
| 2.36 | 79.38 | 430.42 | 48.80 | 51.20 | 42-58 |
| 1.18 | 104.08 | 534.49 | 60.60 | 39.40 | 34-48 |
| 0.6 | 55.57 | 590.06 | 66.90 | 33.10 | 26-38 |
| 0.3 | 74.09 | 664.15 | 75.30 | 24.70 | 18-28 |
| 0.15 | 87.32 | 751.46 | 85.20 | 14.80 | 12-20 |
| 0.075 | 66.15 | 817.61 | 92.70 | 7.30 | 4-10 |

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Table-05: Bitumen Content and gradation Test in 8th main Sai baba temple road at random locations**
**BC- (GRADE-II)**

| Description | Trial 1 | Trail 2 |
|---|---|---|
| 1.Initial weight of sample (gms) w1 | 1057 | 985 |
| 2. final weight of sample after extraction (gms) w2 | 1000 | 932 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 58 | 54 |
| 7. Bitumen content in % (w6/w1)x100 | 5.48 | 5.48 |
| 8.Average | 5.48 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 34.00 | 34.00 | 3.40 | 96.60 | 90-100 |
| 9.5 | 161.00 | 195.00 | 19.50 | 80.50 | 70-88 |
| 4.75 | 168.00 | 363.00 | 36.30 | 63.70 | 53-71 |
| 2.36 | 144.00 | 507.00 | 50.70 | 49.30 | 42-58 |
| 1.18 | 112.00 | 619.00 | 61.90 | 38.10 | 34-48 |
| 0.6 | 75.00 | 694.00 | 69.40 | 30.60 | 26-38 |
| 0.3 | 78.00 | 772.00 | 77.20 | 22.80 | 18-28 |
| 0.15 | 55.00 | 827.00 | 82.70 | 17.30 | 12-20 |
| 0.075 | 118.00 | 945.00 | 94.50 | 5.50 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 38.21 | 38.21 | 4.10 | 95.90 | 90-100 |
| 9.5 | 164.03 | 202.24 | 21.70 | 78.30 | 70-88 |
| 4.75 | 145.39 | 347.64 | 37.30 | 62.70 | 53-71 |
| 2.36 | 88.54 | 436.18 | 46.80 | 53.20 | 42-58 |
| 1.18 | 106.25 | 542.42 | 58.20 | 41.80 | 34-48 |
| 0.6 | 89.47 | 631.90 | 67.80 | 32.20 | 26-38 |
| 0.3 | 78.29 | 710.18 | 76.20 | 23.80 | 18-28 |
| 0.15 | 86.68 | 796.86 | 85.50 | 14.50 | 12-20 |
| 0.075 | 71.76 | 868.62 | 93.20 | 6.80 | 4-10 |

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**Table-06: Bitumen Content and gradation Test in 8th main road to Narayan school at random locations**
**BC- (GRADE-II)**

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 1108 | 1106 | 942 |
| 2. final weight of sample after extraction (gms) w2 | 1049 | 1045.50 | 892 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 60 | 61.5 | 51 |
| 7. Bitumen content in % (w6/w1)x100 | 5.41 | 5.56 | 5.41 |
| 8.Average | | 5.46 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 54.55 | 54.55 | 5.20 | 94.80 | 90-100 |
| 9.5 | 139.52 | 194.07 | 18.50 | 81.50 | 70-88 |
| 4.75 | 219.24 | 413.31 | 39.40 | 60.60 | 53-71 |
| 2.36 | 97.56 | 510.86 | 48.70 | 51.30 | 42-58 |
| 1.18 | 79.72 | 590.59 | 56.30 | 43.70 | 34-48 |
| 0.6 | 123.78 | 714.37 | 68.10 | 31.90 | 26-38 |
| 0.3 | 81.82 | 796.19 | 75.90 | 24.10 | 18-28 |
| 0.15 | 88.12 | 884.31 | 84.30 | 15.70 | 12-20 |
| 0.075 | 103.85 | 988.16 | 94.20 | 5.80 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 30.32 | 30.32 | 2.90 | 97.10 | 90-100 |
| 9.5 | 151.60 | 181.92 | 17.40 | 82.60 | 70-88 |
| 4.75 | 187.14 | 369.06 | 35.30 | 64.70 | 53-71 |
| 2.36 | 120.23 | 489.29 | 46.80 | 53.20 | 42-58 |
| 1.18 | 118.14 | 607.44 | 58.10 | 41.90 | 34-48 |
| 0.6 | 89.91 | 697.35 | 66.70 | 33.30 | 26-38 |
| 0.3 | 120.23 | 817.58 | 78.20 | 21.80 | 18-28 |
| 0.15 | 75.28 | 892.86 | 85.40 | 14.60 | 12-20 |
| 0.075 | 76.32 | 969.18 | 92.70 | 7.30 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 42.82 | 42.82 | 4.80 | 95.20 | 90-100 |
| 9.5 | 130.23 | 173.05 | 19.40 | 80.60 | 70-88 |
| 4.75 | 137.37 | 310.42 | 34.80 | 65.20 | 53-71 |
| 2.36 | 123.10 | 433.51 | 48.60 | 51.40 | 42-58 |
| 1.18 | 75.82 | 509.33 | 57.10 | 42.90 | 34-48 |
| 0.6 | 99.90 | 609.24 | 68.30 | 31.70 | 26-38 |
| 0.3 | 79.39 | 688.62 | 77.20 | 22.80 | 18-28 |
| 0.15 | 64.22 | 752.85 | 84.40 | 15.60 | 12-20 |
| 0.075 | 82.06 | 834.91 | 93.60 | 6.40 | 4-10 |

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**Table-07: Bitumen Content and gradation Test in Ventketeshware temple Road at random locations**
**BC- (GRADE-II)**

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 1125 | 967 | 958 |
| 2. final weight of sample after extraction (gms) w2 | 1065 | 915 | 907 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 61 | 53 | 52 |
| 7. Bitumen content in % (w6/w1)x100 | 5.42 | 5.48 | 5.42 |
| 8.Average | | 5.44 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 55.38 | 55.38 | 5.20 | 94.80 | 90-100 |
| 9.5 | 132.06 | 187.44 | 17.60 | 82.40 | 70-88 |
| 4.75 | 166.14 | 353.58 | 33.20 | 66.80 | 53-71 |
| 2.36 | 184.25 | 537.83 | 50.50 | 49.50 | 42-58 |
| 1.18 | 93.72 | 631.55 | 59.30 | 40.70 | 34-48 |
| 0.6 | 77.75 | 709.29 | 66.60 | 33.40 | 26-38 |
| 0.3 | 96.92 | 806.21 | 75.70 | 24.30 | 18-28 |
| 0.15 | 112.89 | 919.10 | 86.30 | 13.70 | 12-20 |
| 0.075 | 83.07 | 1002.17 | 94.10 | 5.90 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 34.77 | 34.77 | 3.80 | 96.20 | 90-100 |
| 9.5 | 143.66 | 178.43 | 19.50 | 80.50 | 70-88 |
| 4.75 | 142.74 | 321.17 | 35.10 | 64.90 | 53-71 |
| 2.36 | 125.36 | 446.52 | 48.80 | 51.20 | 42-58 |
| 1.18 | 74.12 | 520.64 | 56.90 | 43.10 | 34-48 |
| 0.6 | 111.63 | 632.27 | 69.10 | 30.90 | 26-38 |
| 0.3 | 75.95 | 708.21 | 77.40 | 22.60 | 18-28 |
| 0.15 | 70.45 | 778.67 | 85.10 | 14.90 | 12-20 |
| 0.075 | 71.37 | 850.04 | 92.90 | 7.10 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 39.91 | 39.91 | 4.40 | 95.60 | 90-100 |
| 9.5 | 117.91 | 157.82 | 17.40 | 82.60 | 70-88 |
| 4.75 | 146.93 | 304.75 | 33.60 | 66.40 | 53-71 |
| 2.36 | 156.00 | 460.76 | 50.80 | 49.20 | 42-58 |
| 1.18 | 81.63 | 542.39 | 59.80 | 40.20 | 34-48 |
| 0.6 | 72.56 | 614.95 | 67.80 | 32.20 | 26-38 |
| 0.3 | 73.47 | 688.41 | 75.90 | 24.10 | 18-28 |
| 0.15 | 77.10 | 765.51 | 84.40 | 15.60 | 12-20 |
| 0.075 | 95.24 | 860.74 | 94.90 | 5.10 | 4-10 |

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**Table-08: Bitumen Content and gradation Test in Thindlu Govt Hospital Road at random locations**
**BC- (GRADE-II)**

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 977 | 1081 | 930 |
| 2. final weight of sample after extraction (gms) w2 | 924 | 1023 | 880 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 54 | 59 | 51 |
| 7. Bitumen content in % (w6/w1)x100 | 5.52 | 5.45 | 5.48 |
| 8.Average | | 5.48 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 40.66 | 40.66 | 4.40 | 95.60 | 90-100 |
| 9.5 | 143.22 | 183.88 | 19.90 | 80.10 | 70-88 |
| 4.75 | 141.37 | 325.25 | 35.20 | 64.80 | 53-71 |
| 2.36 | 124.74 | 449.99 | 48.70 | 51.30 | 42-58 |
| 1.18 | 85.01 | 535.00 | 57.90 | 42.10 | 34-48 |
| 0.6 | 80.39 | 615.38 | 66.60 | 33.40 | 26-38 |
| 0.3 | 101.64 | 717.02 | 77.60 | 22.40 | 18-28 |
| 0.15 | 75.77 | 792.79 | 85.80 | 14.20 | 12-20 |
| 0.075 | 73.92 | 866.71 | 93.80 | 6.20 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 35.81 | 35.81 | 3.50 | 96.50 | 90-100 |
| 9.5 | 147.31 | 183.12 | 17.90 | 82.10 | 70-88 |
| 4.75 | 142.20 | 325.31 | 31.80 | 68.20 | 53-71 |
| 2.36 | 192.32 | 517.64 | 50.60 | 49.40 | 42-58 |
| 1.18 | 69.56 | 587.20 | 57.40 | 42.60 | 34-48 |
| 0.6 | 110.48 | 697.69 | 68.20 | 31.80 | 26-38 |
| 0.3 | 79.79 | 777.48 | 76.00 | 24.00 | 18-28 |
| 0.15 | 79.79 | 857.27 | 83.80 | 16.20 | 12-20 |
| 0.075 | 106.39 | 963.67 | 94.20 | 5.80 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 44.88 | 44.88 | 5.10 | 94.90 | 90-100 |
| 9.5 | 101.20 | 146.08 | 16.60 | 83.40 | 70-88 |
| 4.75 | 190.08 | 336.16 | 38.20 | 61.80 | 53-71 |
| 2.36 | 82.72 | 418.88 | 47.60 | 52.40 | 42-58 |
| 1.18 | 113.52 | 532.40 | 60.50 | 39.50 | 34-48 |
| 0.6 | 58.08 | 590.48 | 67.10 | 32.90 | 26-38 |
| 0.3 | 95.04 | 685.52 | 77.90 | 22.10 | 18-28 |
| 0.15 | 66.00 | 751.52 | 85.40 | 14.60 | 12-20 |
| 0.075 | 67.76 | 819.28 | 93.10 | 6.90 | 4-10 |

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## Table-9: Bitumen Content and gradation Test in Ananda layout at random locations
### BC- (GRADE-II)

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 1004 | 976 | 987 |
| 2. final weight of sample after extraction (gms) w2 | 950 | 923 | 934 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 55 | 54 | 54 |
| 7. Bitumen content in % (w6/w1)x100 | 5.47 | 5.53 | 5.47 |
| 8.Average | 5.49 | | |

| SIEVE SIZE mm | Trail 1 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 50.35 | 50.35 | 5.30 | 94.70 | 90-100 |
| 9.5 | 150.10 | 200.45 | 21.10 | 78.90 | 70-88 |
| 4.75 | 146.30 | 346.75 | 36.50 | 63.50 | 53-71 |
| 2.36 | 134.90 | 481.65 | 50.70 | 49.30 | 42-58 |
| 1.18 | 63.65 | 545.30 | 57.40 | 42.60 | 34-48 |
| 0.6 | 82.65 | 627.95 | 66.10 | 33.90 | 26-38 |
| 0.3 | 84.55 | 712.50 | 75.00 | 25.00 | 18-28 |
| 0.15 | 84.55 | 797.05 | 83.90 | 16.10 | 12-20 |
| 0.075 | 95.95 | 893.00 | 94.00 | 6.00 | 4-10 |

| SIEVE SIZE mm | Trail 2 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 36.00 | 36.00 | 3.90 | 96.10 | 90-100 |
| 9.5 | 123.68 | 159.68 | 17.30 | 82.70 | 70-88 |
| 4.75 | 161.53 | 321.20 | 34.80 | 65.20 | 53-71 |
| 2.36 | 162.45 | 483.65 | 52.40 | 47.60 | 42-58 |
| 1.18 | 69.23 | 552.88 | 59.90 | 40.10 | 34-48 |
| 0.6 | 51.69 | 604.57 | 65.50 | 34.50 | 26-38 |
| 0.3 | 98.76 | 703.33 | 76.20 | 23.80 | 18-28 |
| 0.15 | 58.15 | 761.48 | 82.50 | 17.50 | 12-20 |
| 0.075 | 110.76 | 872.24 | 94.50 | 5.50 | 4-10 |

| SIEVE SIZE mm | Trail 3 Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 54.17 | 54.17 | 5.80 | 94.20 | 90-100 |
| 9.5 | 99.00 | 153.18 | 16.40 | 83.60 | 70-88 |
| 4.75 | 144.77 | 297.95 | 31.90 | 68.10 | 53-71 |
| 2.36 | 155.04 | 452.99 | 48.50 | 51.50 | 42-58 |
| 1.18 | 84.99 | 537.98 | 57.60 | 42.40 | 34-48 |
| 0.6 | 107.41 | 645.39 | 69.10 | 30.90 | 26-38 |
| 0.3 | 61.64 | 707.04 | 75.70 | 24.30 | 18-28 |
| 0.15 | 82.19 | 789.23 | 84.50 | 15.50 | 12-20 |
| 0.075 | 86.86 | 876.09 | 93.80 | 6.20 | 4-10 |

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Table-10: Bitumen Content and gradation Test in Parvathama Layout at random locations
BC- (GRADE-II)

| Description | Trial 1 | Trail 2 | Trail 3 |
|---|---|---|---|
| 1.Initial weight of sample (gms) w1 | 988 | 1027 | 930 |
| 2. final weight of sample after extraction (gms) w2 | 935 | 972 | 880 |
| 3. Initial weight of filter paper (gms) w3 | 7 | 7 | 7 |
| 4. Final weight of filter paper (gms) w4 | 8 | 8 | 8 |
| 5. Increased weight of filter paper (gms) w5=(w4-w3) | 1 | 1 | 1 |
| 6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5 | 54 | 56 | 51 |
| 7. Bitumen content in % (w6/w1)x100 | 5.46 | 5.45 | 5.48 |
| 8.Average | | 5.46 | |

| SIEVE SIZE mm | Trail 1 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 35.53 | 35.53 | 3.80 | 96.20 | 90-100 |
| 9.5 | 111.27 | 146.80 | 15.70 | 84.30 | 70-88 |
| 4.75 | 165.50 | 312.29 | 33.40 | 66.60 | 53-71 |
| 2.36 | 123.42 | 435.71 | 46.60 | 53.40 | 42-58 |
| 1.18 | 129.97 | 565.68 | 60.50 | 39.50 | 34-48 |
| 0.6 | 72.00 | 637.67 | 68.20 | 31.80 | 26-38 |
| 0.3 | 67.32 | 704.99 | 75.40 | 24.60 | 18-28 |
| 0.15 | 89.76 | 794.75 | 85.00 | 15.00 | 12-20 |
| 0.075 | 73.87 | 868.62 | 92.90 | 7.10 | 4-10 |

| SIEVE SIZE mm | Trail 2 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 50.54 | 50.54 | 5.20 | 94.80 | 90-100 |
| 9.5 | 118.58 | 169.13 | 17.40 | 82.60 | 70-88 |
| 4.75 | 173.02 | 342.14 | 35.20 | 64.80 | 53-71 |
| 2.36 | 138.02 | 480.17 | 49.40 | 50.60 | 42-58 |
| 1.18 | 85.54 | 565.70 | 58.20 | 41.80 | 34-48 |
| 0.6 | 76.79 | 642.49 | 66.10 | 33.90 | 26-38 |
| 0.3 | 111.78 | 754.27 | 77.60 | 22.40 | 18-28 |
| 0.15 | 61.24 | 815.51 | 83.90 | 16.10 | 12-20 |
| 0.075 | 90.40 | 905.90 | 93.20 | 6.80 | 4-10 |

| SIEVE SIZE mm | Trail 3 | | | | Requirement as per MORTH table 500.17 |
|---|---|---|---|---|---|
| | Weight Retained, gm | Cumulative Weight Retained | %Cumulative Retained | % Passing | |
| 19.00 | 0 | 0.00 | 0.00 | 100.00 | 100 |
| 13.2 | 42.24 | 42.24 | 4.80 | 95.20 | 90-100 |
| 9.5 | 102.08 | 144.32 | 16.40 | 83.60 | 70-88 |
| 4.75 | 157.52 | 301.84 | 34.30 | 65.70 | 53-71 |
| 2.36 | 118.80 | 420.64 | 47.80 | 52.20 | 42-58 |
| 1.18 | 82.72 | 503.36 | 57.20 | 42.80 | 34-48 |
| 0.6 | 69.52 | 572.88 | 65.10 | 34.90 | 26-38 |
| 0.3 | 124.08 | 696.96 | 79.20 | 20.80 | 18-28 |
| 0.15 | 45.76 | 742.72 | 84.40 | 15.60 | 12-20 |
| 0.075 | 74.80 | 817.52 | 92.90 | 7.10 | 4-10 |

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Conclusion:**

The file containing **2nd & Part** bill has been submitted for the above work to QA department on **18.05.2023** requesting for spot inspection. Engineers of QA/QC division have visited the work spot on **23.05.2023**

PMC team was instructed to assess the strength of concrete used RCC Drain Wall (M20), Precast Drain Slab (M20), Culvert Slab (M20) by Rebound Hammer Test and also Gradation & Bitumen content test for BC (Grade-II) on Asphalted road . The Rebound hammer test and Bitumen Content and Gradation Tests were conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC, it is concluded that the results of the samples collected are in accordance with the standards/ specifications mention in the IRC codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Engineer in charge of work shall ensure that work executed as per this bill is not claimed in any other bill /work or else Engineer in charge of work shall be held responsible.

Further, QA/QC directs the Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

All materials or work not conforming to the requirements of the specifications shall be considered unacceptable and rejected. The unacceptable materials or works that are rejected shall be immediately removed unless the defects are corrected and approved by the engineer in-charge of work.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

This report by QA/QC is pertaining to the work carried out in **1st & Final bill** only. Therefore, further QA/QC reports shall be obtained for the items of work carried out in future Running Account bill / Final bill.

Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at work spot.

Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP), The same shall be rectified immediately on top priority without fail.

Engineer in charge of work shall ensure that any changes/ modification/ change in location as per the sanctioned estimate to be got approved by competent authority.

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/05/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 1:** Durgapermeshwari Road (at entrance, opp house no #897/1, opp house no #898)

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

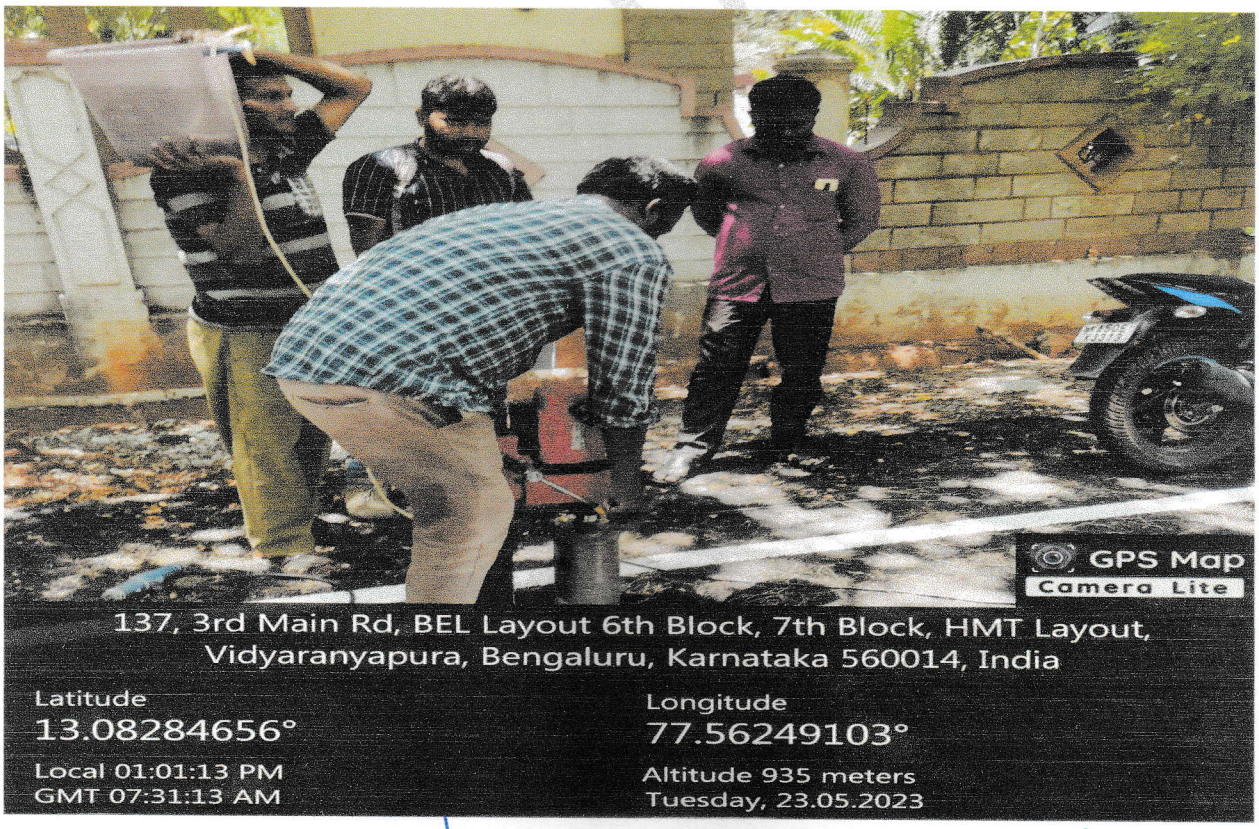
31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 2:** 6th block BEL layout (opp to park no 4, opp to #138, opp to #135)




31/5/23

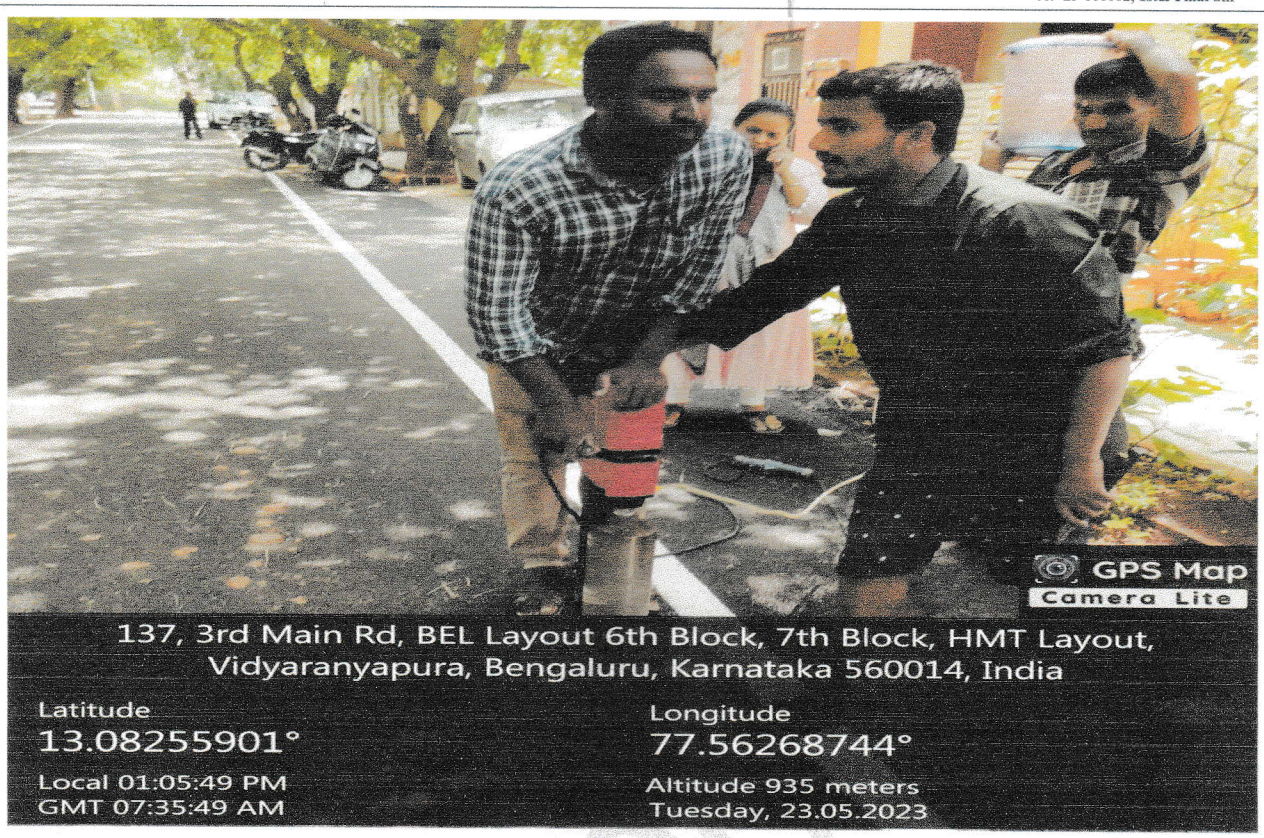
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/05/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ



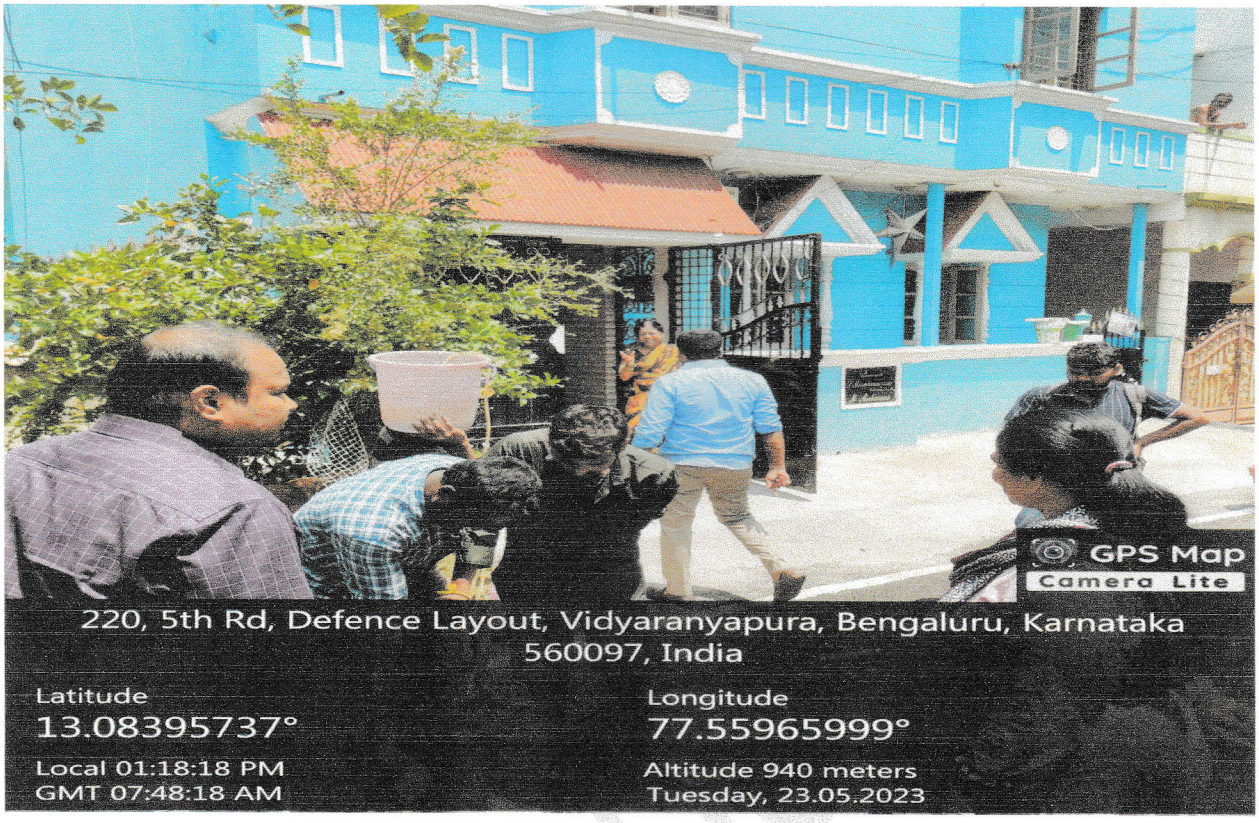
31/5/23 31/5/23 31/5/23

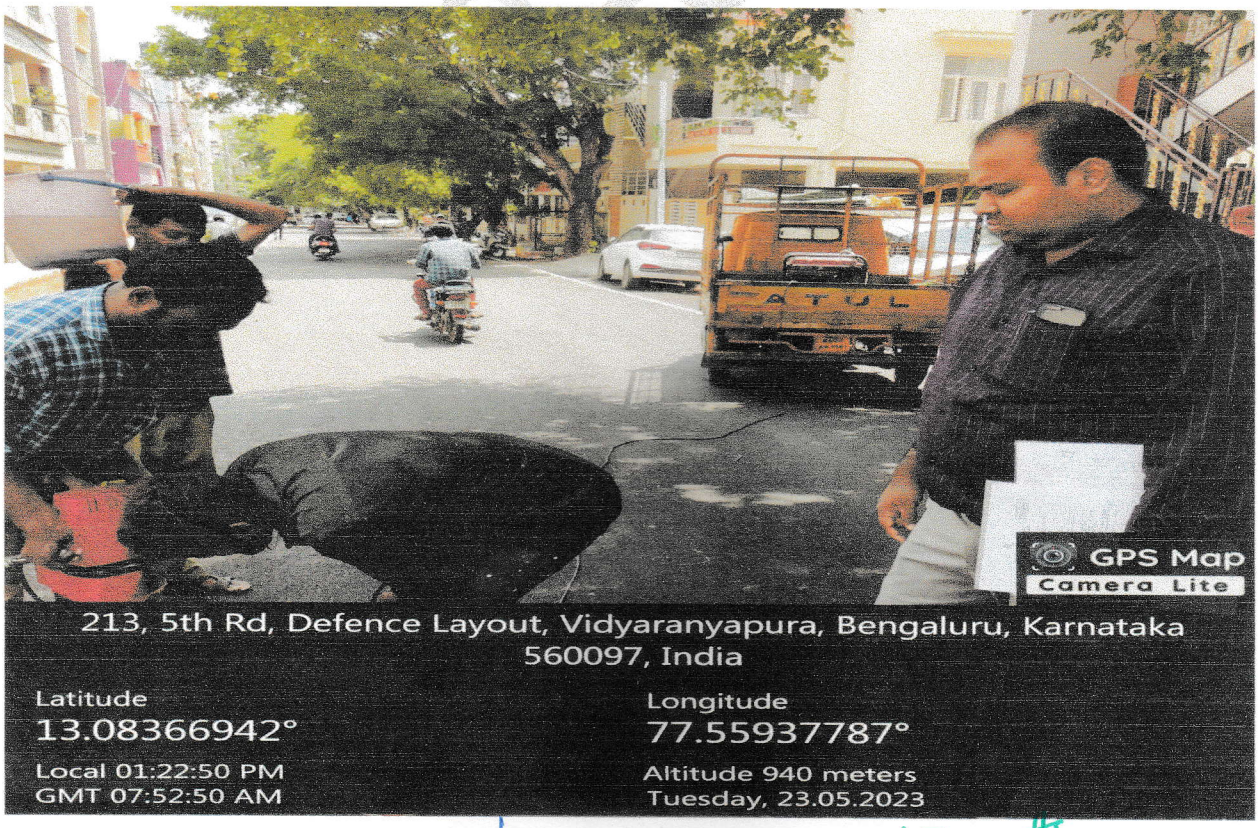
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಉಪ-ವಿಭಾಗ ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 3:** Defence layout (opp to site to #217, opp to site #213, opp to site #207)




31/5/23

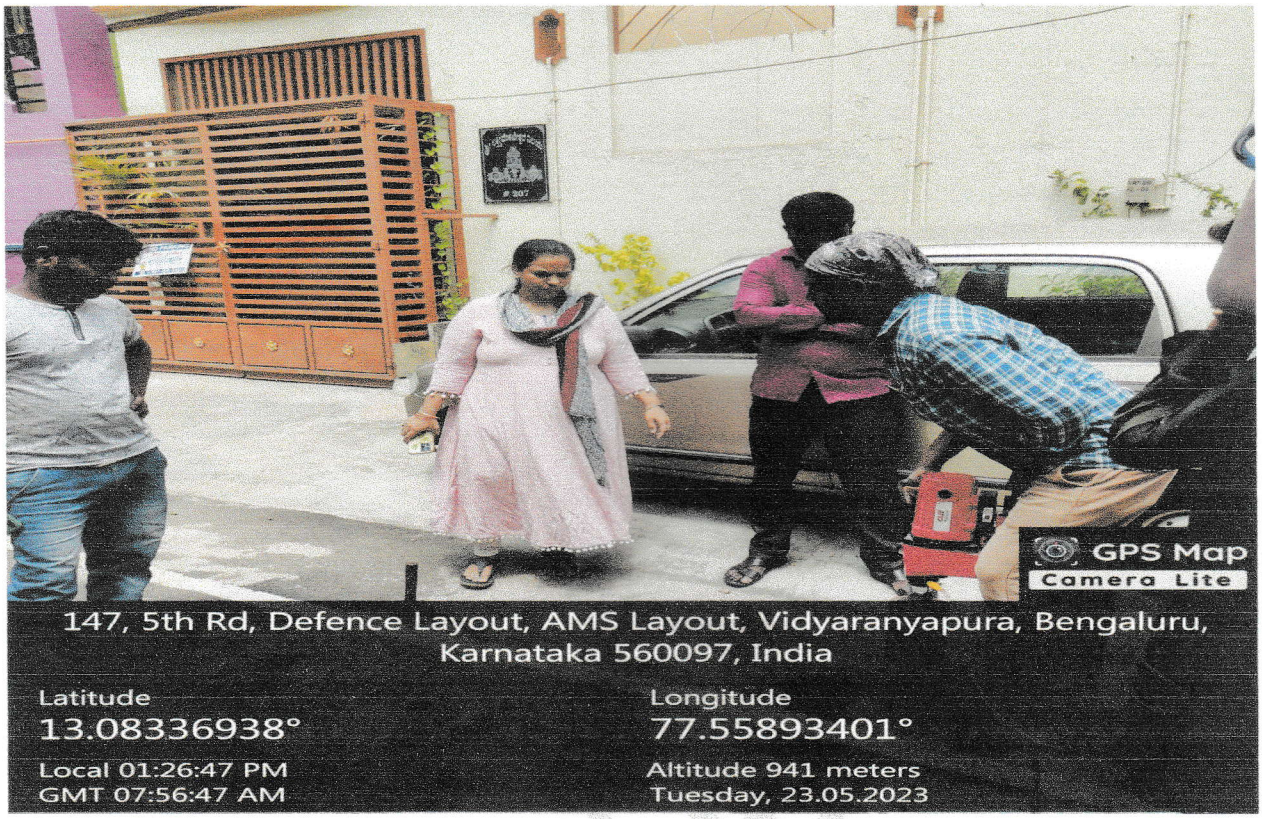
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

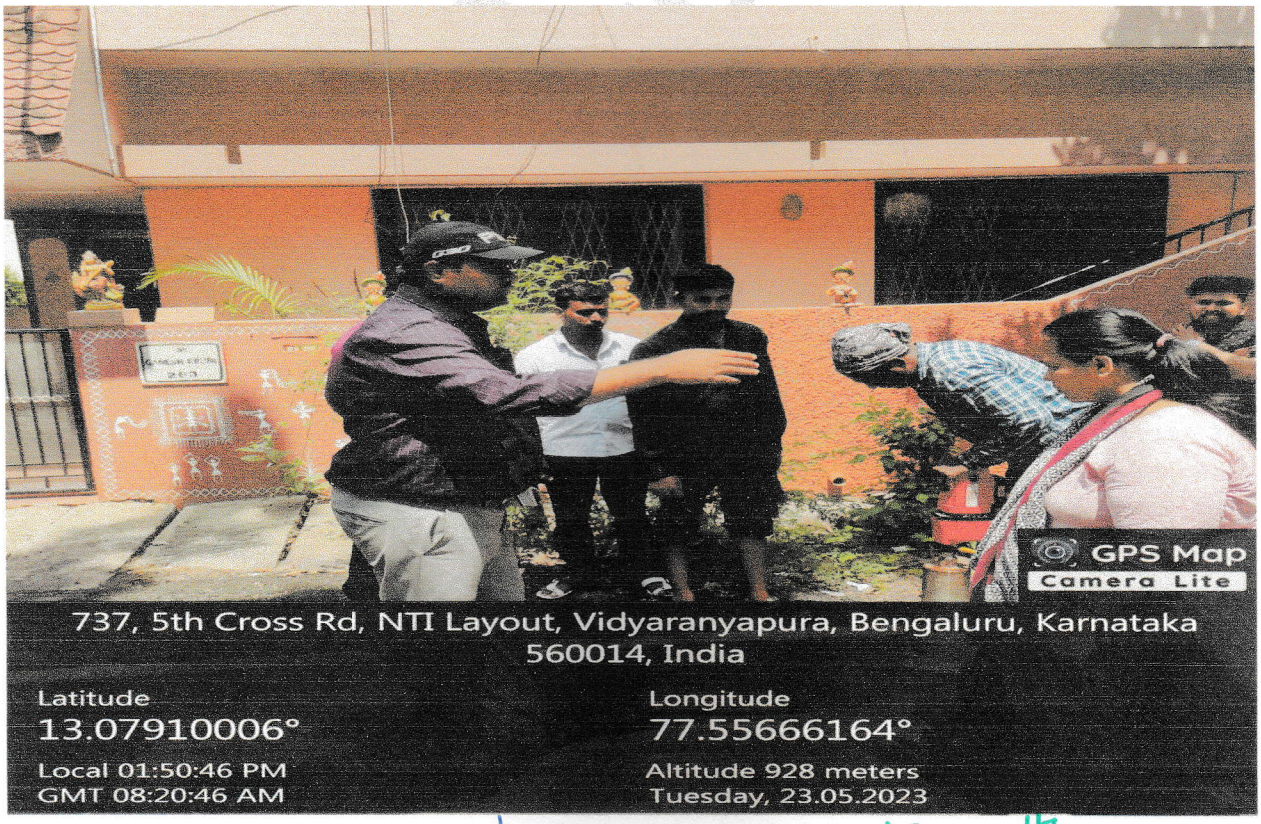
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ




**Location 4:** 5th cross NTI Layout (opp to site #283, opp to #84/A, opp to #134)




31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/05/23
ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
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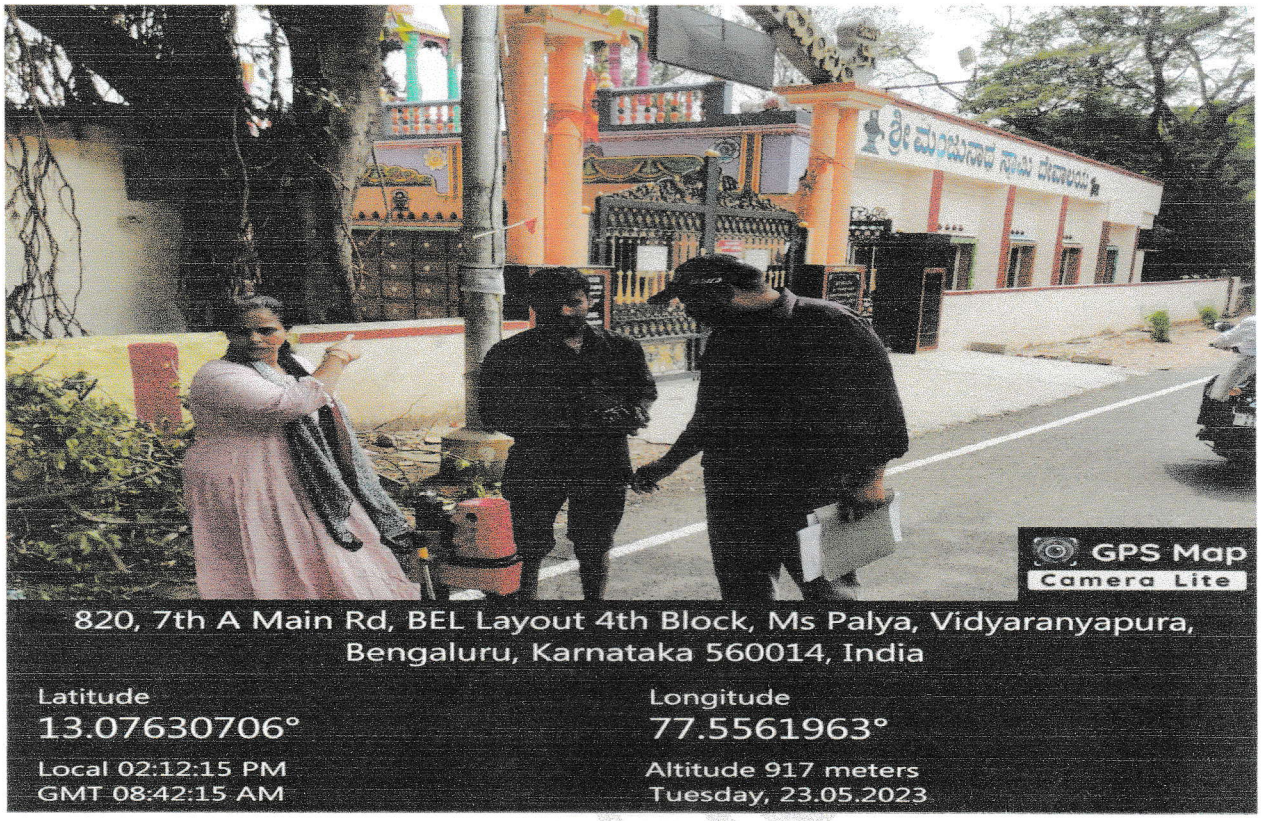
31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 5:** 8th main Sai baba temple road (Opp to temple, opp to # 751)



31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರ
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

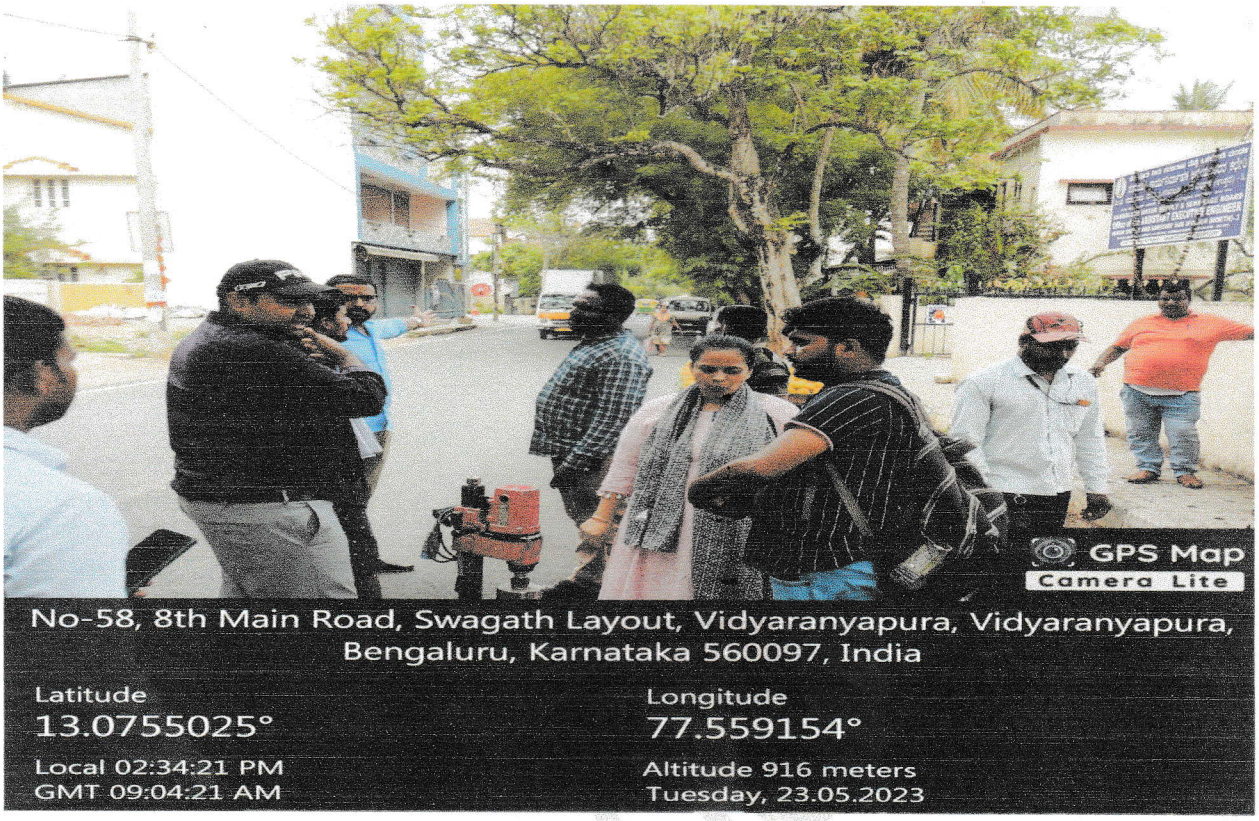
31/5/23

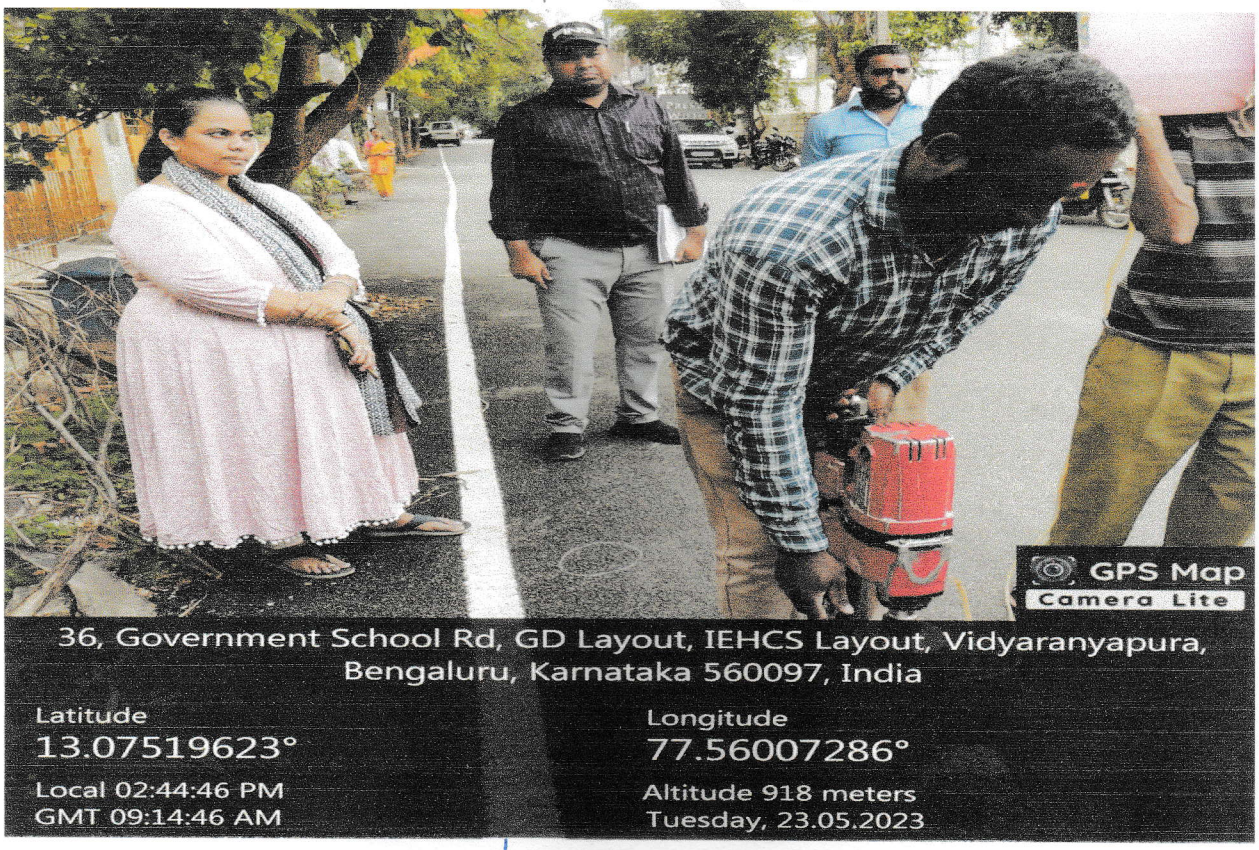
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 6:** 8th main road to Narayan school (Opp BWSSB office, Opp to # 37, Opp to # 135 vidmahe enclave)




31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

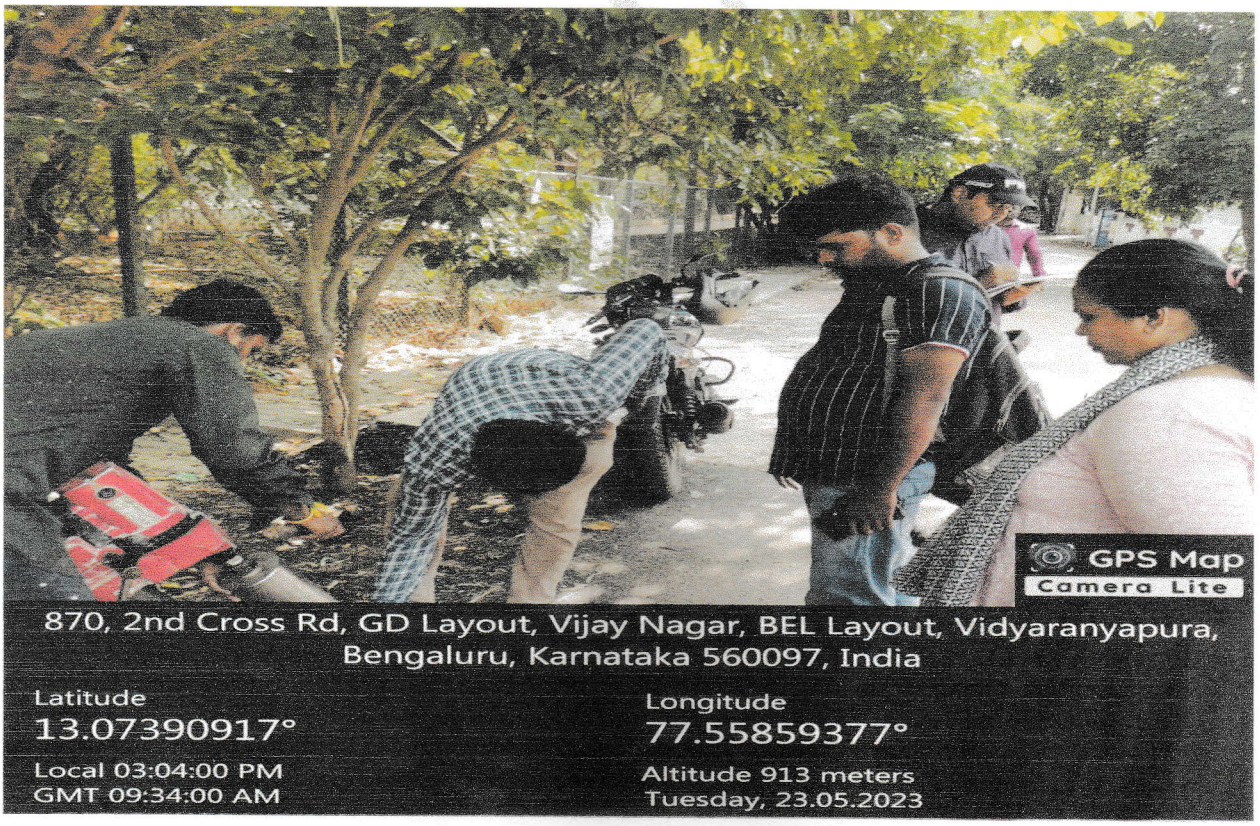
31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Location 7: Ventketeshware temple Road (opp to temple, Opp road to #871/1, Opp to#898)




31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

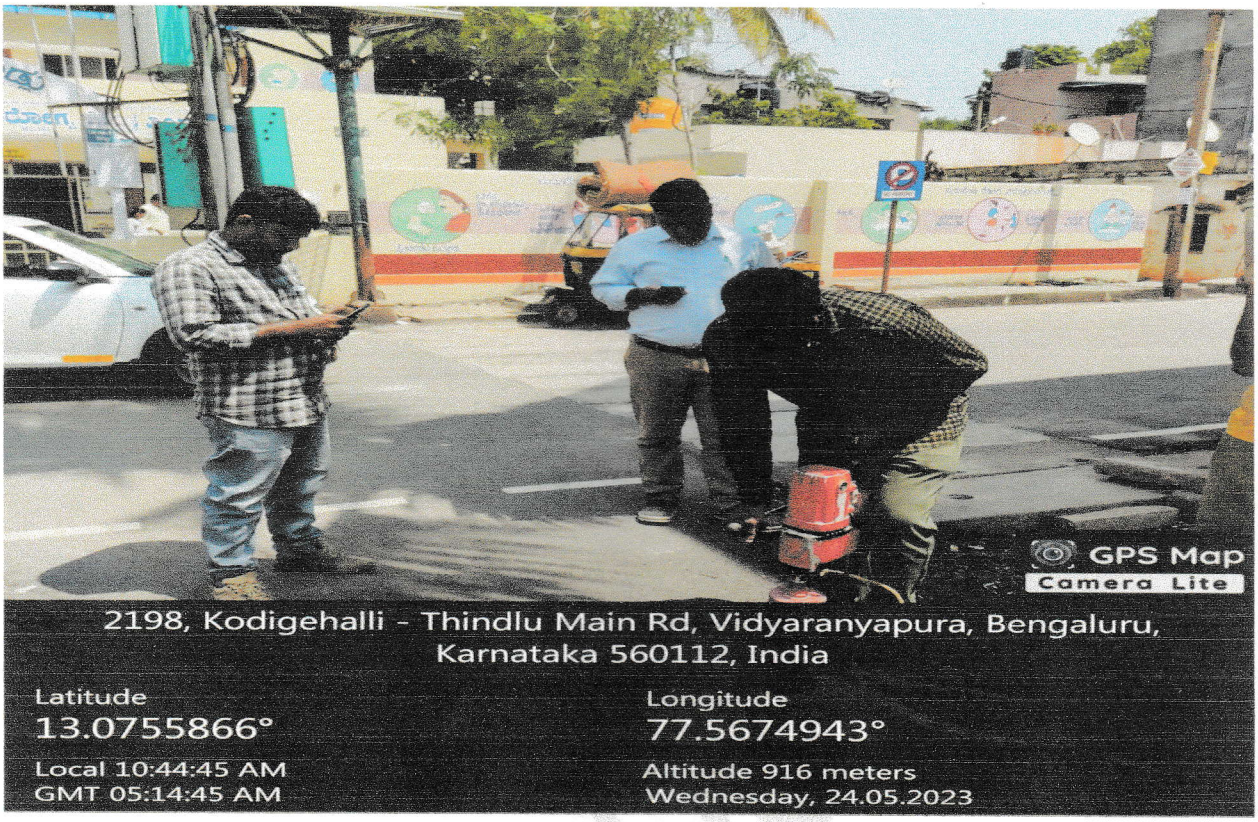
31/5/23

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/05/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 8:** Thindlu Govt Hospital Road (opp to chicken shop, opp road to nagamas house, Opp to # 36)



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ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಉಪ-ವಿಭಾಗ ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 9:** Ananda layout (opp to #114, opp to #16, opp to Srivari Building)

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23
ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/5/23
ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

**Location 10:** Parvathama Layout (opp to #4, opp to #87, oppo to #14)

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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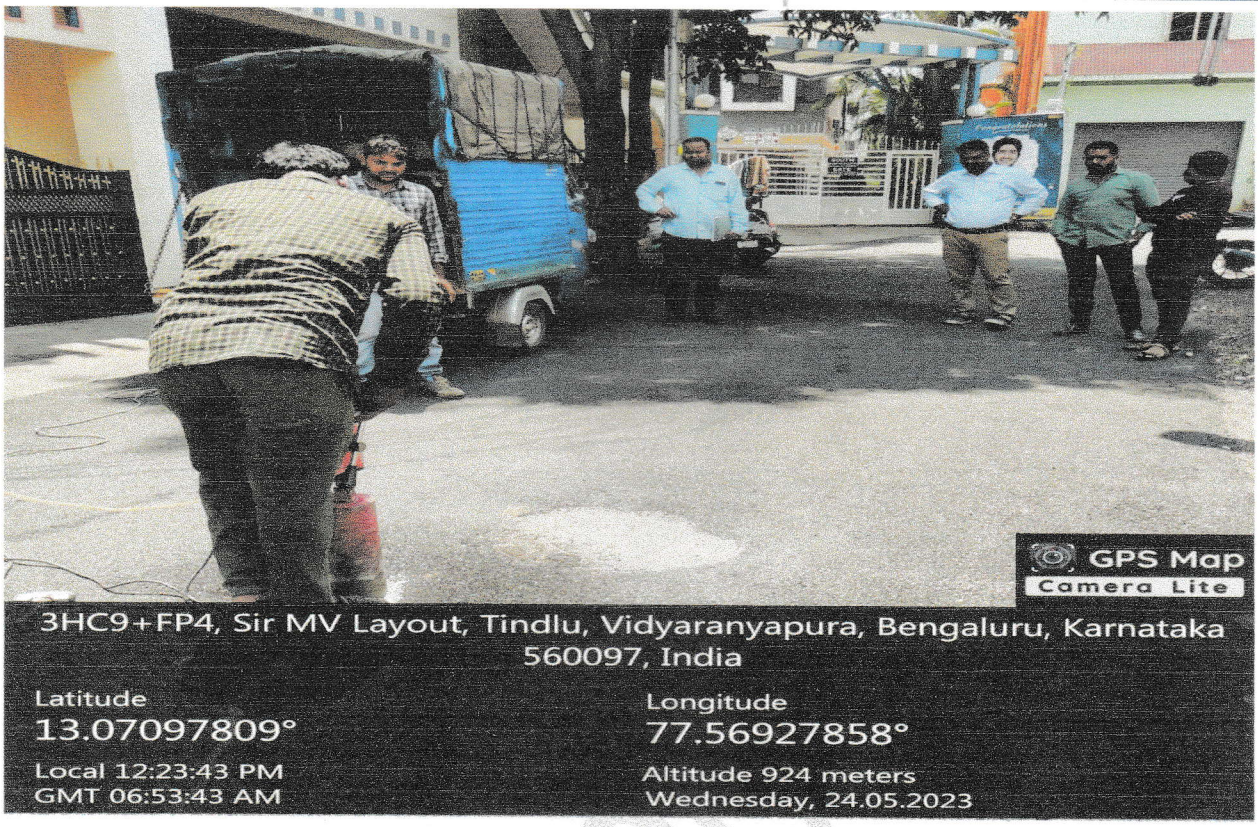
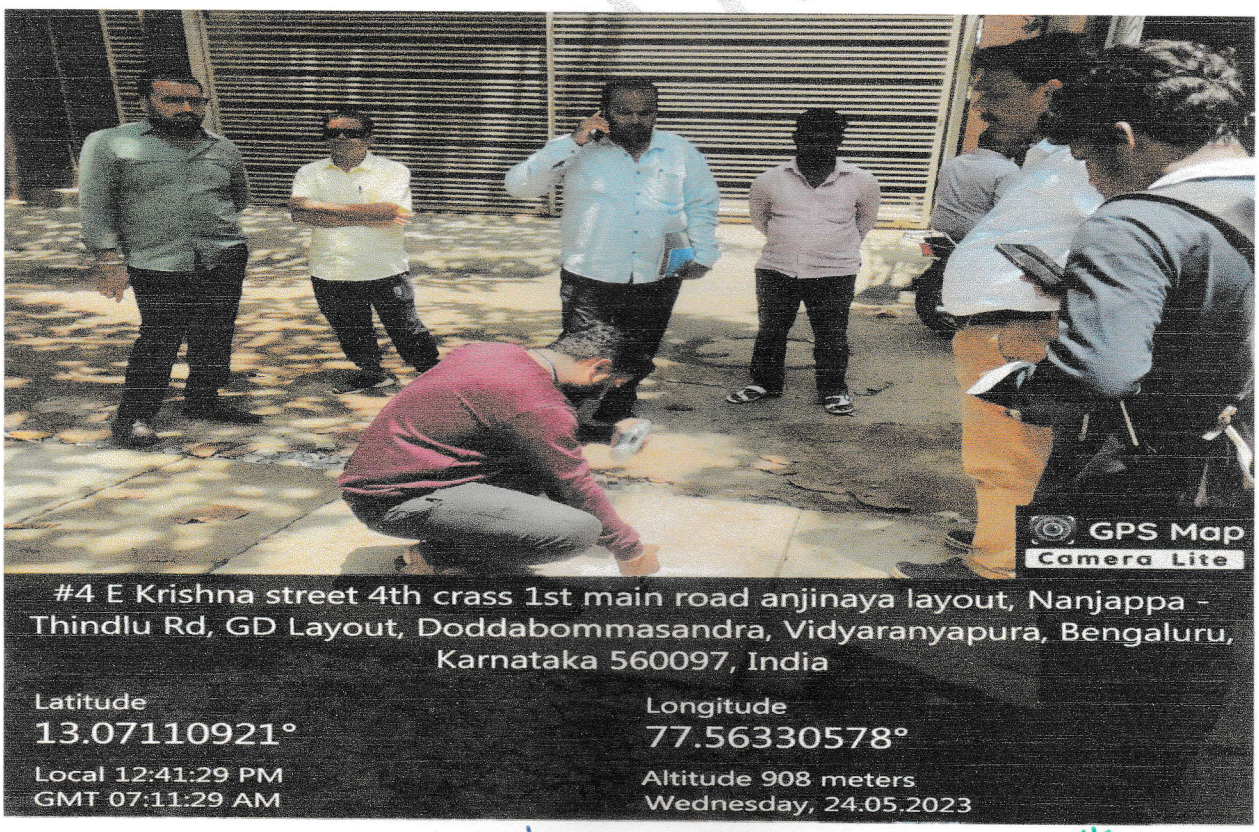
ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ




**Location 11:** 4th cross Anjaneya temple layout (Krishna street road entrance)

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ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

6th block bel Layout

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

31/05/23

ಅಧೀಕ್ಷಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ